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SUBJECT: PROJECT 0405 – WORKER HEALTH & SAFETY ACTIVITIES FOLLOWING
METHAMIDOPHOS DRIFT INCIDENT IN KERN COUNTY (16-KER-04)

On May 2, 2004, seven labor crews, totaling approximately 140 workers, were harvesting peaches in a mature orchard. The crews started working at 0630. The workers were harvesting block 52 of an orchard owned by Sandhill Farms. The workers were working their way north from the south side of the block 52. At approximately 0800, workers could smell the odor of a pesticide as it was being flown onto a nearby potato field (approximately 0.2 miles away from the southeast corner of block 52). (See site map 1.) The pesticide was identified as methamidophos. They smelled a pesticide odor and developed illness symptoms following a suspected drift incident. Three workers near the edge of the orchard became very ill and were transported to Kern Medical Center. (Another worker was hospitalized the next day.)

The Kern County Agricultural Commissioner's office (CAC) and DPR's Central Regional Office (CRO) were informed of the incident. The Department of Pesticide Regulation's (DPR's), Worker Health and Safety (WHS) Branch was informed of the incident on May 3rd. On May 3rd, at 1000 hours Bernie Hernandez, WHS, was dispatched to Kern County to collect dislodgeable foliar residue (DFR) samples. Samples were collected from block 52, in the area where the workers were harvesting when the incident happened, from block 51 (an adjacent plum orchard) and from the treated potato field (no block number). A total of 10 samples (each sample containing 80-leaf punch discs [$\frac{1}{2}$ " diameter]) were collected. Four samples were collected from block 52, 2 samples from block 51, and 4 samples from the treated potato field. Samples were delivered the next morning to the California Department of Food and Agriculture (CDFA) Analytical Chemistry Laboratory in Sacramento for extraction and analysis. See Table 1 for the results of the sample analyses.

The attached sample map 1 shows the area where DFR samples were collected on May 3rd. In addition, the location and distance from the edge of the field to irrigation pipe running east to west of the orchard is shown. Tree-rows run north and south.



Dr. Michael O'Malley, medical consultant for DPR, was informed of the incident on May 3, he was asked to develop a fact sheet for methamidophos and sent it to the Kern Medical Center. Dr. O'Malley also contacted the treating physician on May 4th and discussed the workers' medical condition. Additional literature on organophosphate signs, symptoms, and treatment was relayed to Kern Medical Center on May 5th.

On May 4th, at 1800 hours, Bernie Hernandez and Angélica Welsh from WHS were instructed to assist the Kern CAC office with the interviews and additional sample collection. On May 5th, 0800 hours, Bernie and Angélica met Irene Acosta (Kern CAC) and Leonard Herrera (DPR CRO) who briefed WHS staff on the drift incident. Irene also presented a copy of the English questionnaire developed by the Kern CAC staff to gather information from the workers to help in the investigation. Bernie faxed the questionnaire to Sue Edmiston (WHS supervisor) and received comments back on the questionnaire.

Questionnaire: On May 5th at 1000, Angélica along with CRO and CAC staff began interviewing the work crews at the worksite in Arvin. The farm workers spoke little or no English. Angélica met the crew checker, explained to her what was needed, shared the questionnaire, and asked her for a list of the workers. The crew was composed of 21 harvesters, a crew manager, a tractor driver and the checker. Not all the workers from the list were working during the drift incident. Angélica followed the list in the numerical order to perform the interviews and contacted 13 workers throughout the day, including the lunch hour. At 1545, Angélica finished interviewing 13 workers from one crew.

DFR samples: Bernie started collecting a second set of DFR samples at 1000. Samples consisted of 18, 4oz samples (each sample containing 40-leaf punch discs [1" diameter]): four sample were taken from the area where the drift incident occurred, peach block 52, approximately rows 15 through 18, north and south of the irrigation pipe; 2 samples from the southeast area of block 52 (rows 5 through 8); two samples each from blocks 51 (plums), 50 (apricots), 45 (peaches), 46 (peaches), and 43 (peaches); and two samples from the treated potato field. At 1200 hours, sample collection was completed. All samples were identified, bagged, iced, and prepared for transport. At 1330 hours, the samples were delivered to Jeanne Martin (Enforcement Branch) to courier the samples to the CDFA Analytical Chemistry Laboratory for analysis in Sacramento. Sample Map 2 shows where DFR samples were collected on May 5th. See Table 1 for the results of the sample analyses.

On May 6th, at 0535, Bernie and Angélica drove from Bakersfield to Arvin. Angélica resumed interviewing the rest of the crew. She finished four worker interviews at 1000. At 1115, Bernie and Angélica stopped at the CAC office to check if any other assistance was needed. No further DFR samples were collected.

Interview Findings

The workers interviewed by Angélica, stated that within minutes of the start of application, the crew smelled an odor and developed the following symptoms: nausea, vomiting, headache, teary

eyes, eye irritation, sore throat, tongue numbness, tight chest, cough, spitting, skin rash, and itch. Some workers noticed a helicopter on the south edge of the field; others only heard the engine noise. None of the workers interviewed by Angélica felt a mist/spray on them. Workers were asking the manager to take them out of the field; no action was taken until approximately 0830. Workers were taken to the shop for about 30 to 90 minutes. Afterwards, the labor contractors instructed them to go home, bathe, and launder their clothes. Two workers had not returned to work following doctor's order to stay home until they felt better. The checker went to the hospital on May 3rd with symptoms of vomiting. Three workers went to the clinic at noon on May 5th, and one was sent to the hospital. Two workers did not want to buy the medication prescribed by the doctor as they said they did not have money and did not know they would be compensated later. All the workers were wearing long-sleeved shirts, long pants, a cap or a hat, and some wore cotton gloves. Most of the workers stated they did not receiving training, a few said they had been instructed to wash their hands before eating, and to launder their clothes separate from the other family members clothes.

Table 1: Results of Analysis -- Project 0405 Methamidophos Drift Incident
Samples collected 5/3 -

Drift Site -Peaches			Treatment Site-Potato		
Sample Number	Sample Site	Results (µg/cm ²)	Sample Number	Sample Site	Results (µg/cm ²)
BH04-0001	Peaches (Block 52)	0.011	BH04-0007 ¹	Potatoes	0.51
BH04-0002	Peaches (Block 52)	ND ¹	BH04-0008 ¹	Potatoes	0.58
BH04-0003	Peaches (Block 52)	0.005	BH04-0009 ³	Potatoes	0.24
BH04-0004	Peaches (Block 52)	ND	BH04-00010 ³	Potatoes	0.28
BH04-0005	Plums (Block 51)	ND			
BH04-0006	Plums (Block 51)	ND			

¹ BH04-0007, -0008 collected on east side of field

² ND – None detected (LOD = 0.003 µg/cm²)

³ BH04-0009 - 0010 collected on west side of field

Samples collected 5/5 -

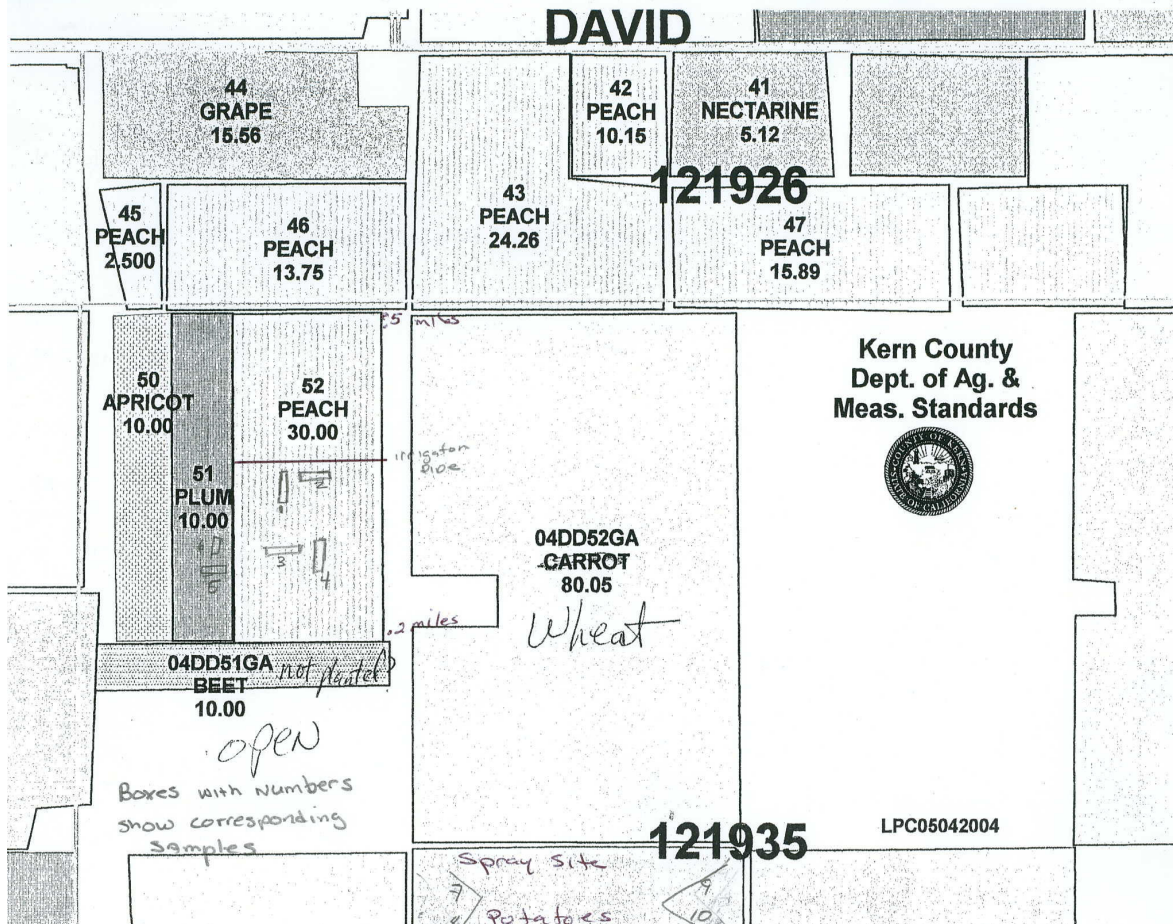
Non-Target Areas			Treatment Site-Potato		
Sample Number	Sample Site	Results (µg/cm ²)	Sample number	Sample Site	Results ug/cm2
BH04-0011-0016	Block 52	ND ¹	BH04-0021 ²	Potatoes	0.46
BH04-0017-0018	Block 51	ND	BH04-0022	Potatoes	0.22
BH04-0019-0020	Block 50	ND			
BH04-0023-0024	Block 45	ND			
BH04-0025-0026	Block 46	ND			
BH04-0027-0028	Block 43	ND			

¹ ND – None detected (LOD = 0.003 µg/cm²)

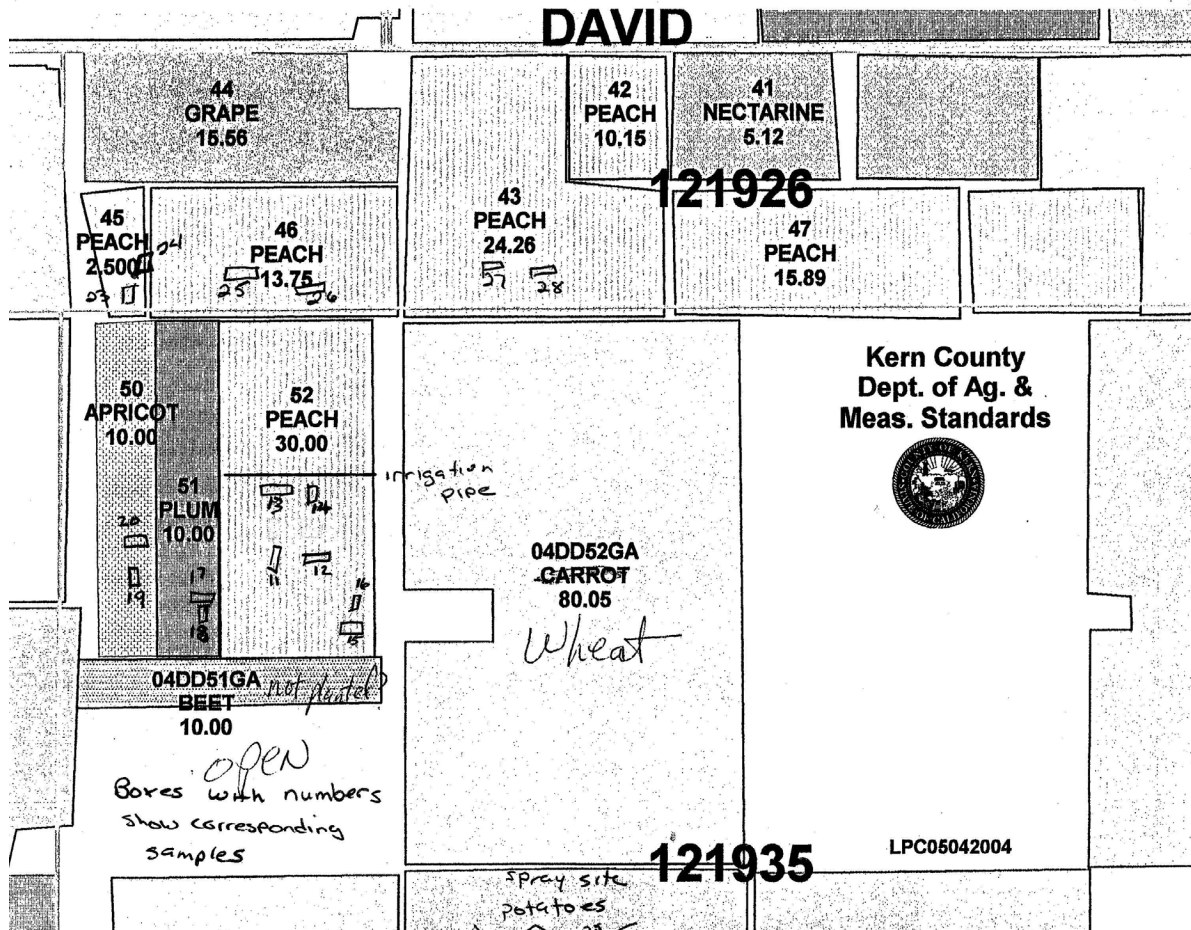
² BH04-0021 - collected on east side of field

Sue Edmiston
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Sample Map 1 (Samples collected May 3, 2004)



Sample Map 2 – Samples collected May 5, 2004



Site Map 1

